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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/517,918	12/14/2004	Joachim Wilhelm Hellmig	NL 020529	8895

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EXAMINER
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DANIELSEN, NATHAN ANDREW

ART UNIT	PAPER NUMBER
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2627

MAIL DATE	DELIVERY MODE
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07/25/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/517,918

Applicant(s)

HELLMIG, JOACHIM WILHELM

Examiner

Nathan Danielsen

Art Unit

2627

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 May 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

Art Unit: 2627

**DETAILED ACTION**

1. Claims 1-32 are pending. Claims 15-32 were added in applicant's amendment filed 25 October 2006.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 3 and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 3 and 13, it is unclear how the first erase power level can be substantially equal to the third erase power level and how both the first and third erase power levels can be lower than the second erase power level (see claims 3 and 13) when the first and second power levels are substantially equal to each other and are both greater than the third erase power level (see claims 1 and 11).

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-8 and 11-32 are rejected under 35 U.S.C. 102(b) as being anticipated by Furumiya et al (WO 01/78072, with reference to English equivalent US Patent 6,894,965).

Regarding claims 1, 11, 14, 19, 22, 25, and 27, Furumiya discloses methods of (and corresponding recording devices for) recording marks representing data in an information layer of a record carrier by irradiating the information layer by means of a pulsed radiation beam (figure 8), each mark being written by a sequence of pulses (figure 8), the recorded marks being erasable by irradiating the information layer with an erase radiation beam (suggested by col. 20, lines 20-57; where forming a

Art Unit: 2627

space using pulse 806 in figure 8 implies overwriting previously-written data), wherein said erase radiation beam between two successive sequences of pulses for writing marks consists of three erase periods (figure 8e; where each sequence of pulses (802-806) falls between two other sequences of pulses when recording data/forming marks and spaces and where each sequence of pulses serves to erase any data previously written on the track being irradiated), and wherein said erase radiation beam has a first erase power level for a first erase period (pulse 802 in figure 8e), a second erase power level higher than or equal to said first erase power level for a second erase period (pulse 810 in figure 8e), and a third erase power level lower than said first and second erase power levels for a third erase period (pulse 806 in figure 8e).

Further regarding claims 25 and 27, Furumiya discloses where the recorded marks representing data including a high period and low period (figure 8).

Regarding claims 2 and 12, Furumiya discloses where said third erase power level is lower than said first erase power level (pulses 802, 806, and 810 in figure 8e are relatively close in magnitude and significantly different from the level of pulse 811).

Regarding claims 3 and 13, Furumiya discloses where said first erase power level and said third erase power level are substantially equal and lower than said second erase power level (pulses 802 and 806 in figure 8e are relatively close in magnitude and significantly different from the level of pulse 811).

Regarding claim 4, Furumiya discloses where said second erase power level is lower than the write power level (w) of said pulses of said pulsed radiation beam for recording marks (the level of pulse 810 is lower than the level of pulse 811 in figure 8e).

Regarding claim 5, Furumiya discloses where said third erase power level is higher than the bias power level (b) between said pulses of said pulsed radiation beam for recording marks (pulse 806 has a greater level than does pulse 805 in figure 8e).

Regarding claim 6, Furumiya discloses where said first erase period and said second erase period are shorter than said third erase period (pulses 802 and 810 when writing mark 821 in figure 8).

Art Unit: 2627

Regarding claim 7, Furumiya discloses where the sum of said first erase period and said second erase period is shorter than half the shortest mark being recorded (pulses 802 and 810 when writing mark 821 in figure 8).

Regarding claim 8, Furumiya discloses where said information layer has a phase which is reversibly changeable between a crystal phase and an amorphous phase (suggested by col. 20, lines 20-57; where forming a space using pulse 806 in figure 8 implies overwriting previously-written data).

Regarding claims 15, 17, 20, and 23, Furumiya discloses where the marks represent data including a high period and a low period (figure 8b), and where a start of the erase radiation beam substantially coincides with a beginning of the low period (figure 8; where, when recording data starting with a low portion, the start of the erase radiation beam (third pulse 806 of figure 8e) coincides with the start of the low period).

Regarding claims 16, 18, 21, 24, 26, and 28, Furumiya discloses where the marks represent data including a high period and a low period (figure 8b), and wherein the three erase periods substantially fill the low period (figures 8b and 8e; where the emitted light is is continuously emitted based on the waveform of figure 8e).

Regarding claims 29 and 31, Furumiya discloses a method of (and associated recoding device for) recording marks on a record carrier, the method comprising the acts of:

irradiating the record carrier with a radiation beam, each mark being written by a sequence of pulses (figure 8); and

erasing recorded marks by irradiating the record carrier with an erase radiation beam (suggested by col. 20, lines 20-57; where forming a space using pulse 806 in figure 8 implies overwriting previously-written data);

wherein the recorded marks represent data including a high period and a low period (figure 8b),  
and

wherein the erase radiation beam includes pulses that substantially fill the low period (figures 8b and 8e; where the emitted light is is continuously emitted based on the waveform of figure 8e).

Art Unit: 2627

Regarding claims 30 and 32, Furumiya discloses where a start of the erase radiation beam substantially coincides with a beginning of the low period (figure 8; where, when recording data starting with a low portion, the start of the erase radiation beam (third pulse 806 of figure 8e) coincides with the start of the low period).

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Furumiya, in view of Nagata et al (US Patent 6,456,584; hereinafter Nagata).

Regarding claims 9 and 10, Furumiya discloses everything claimed, as applied to claim 1. However, Furumiya fails to disclose where the record carrier comprises at least two layers with one layer being at least partially transparent.

In the same field of endeavor, Nagata discloses where said record carrier comprises at least two information layers (col. 3, lines 51-59) and at least one of said two information layers is at least partially transparent (col. 4, lines 44-45).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the record carrier of Furumiya with the structure of Nagata for the purpose of recording data on a record carrier having a large storage capacity (col. 5, lines 65-67).

### ***Response to Arguments***

8. Applicant's arguments filed 16 May 2007, with respect to the rejection(s) of claim(s) 1-32 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Furumiya.

Art Unit: 2627

***Closing Remarks/Comments***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan Danielsen whose telephone number is (571) 272-4248. The examiner can normally be reached on Monday-Friday, 9:00 AM - 5:00 PM Eastern Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Korzuch can be reached on (571) 272-7589. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Nathan Danielsen  
07/20/2007

/William R. Korzuch/  
SPE, Art Unit 2627